



FY 1999 Technology Deployment in Environmental Management

Engineering Tomorrow's Solutions Today

**Site Technology Coordination Group / Technology Deployment Center
U.S. Department of Energy, Idaho Operations Office**



Micropurge Sampling (Deep Zone)

Problem: Cost effective sampling of INEEL's Test Area North (TAN) groundwater.

Baseline Technology: Typically, 3 to 5 well volumes of overlying standing water are purged to ensure that representative formation water is present in the well at the the time of sample collection.

Innovative Technology: Micropurge sampling uses a low flow rate pump to collect water samples at the specific depths associated with permeable zones or high flow rate areas across the well. This method is based on the premise that representative formation water can be collected without it mixing with the standing water in the well which would normally invalidate the sample.

Comparison: The micropurge sampling method generated 95% less waste water than the baseline purge and sample method. There is statistically no difference in the water samples resulting from the two methods.

Benefits: An analysis estimates that the capital costs for installing micropurge pumps for 29 wells at TAN will be recovered in 3 years. After that time, the net savings will be about \$50K per year and \$1.2M over the next 30 years. Cost savings are realized due to reduced labor and handling due to the reduced volume of purge water.

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Idaho National Engineering and Environmental Laboratory